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MODEL 4005-04-0-C1873A
RACK ADAPTER

MP MASTER
MA29937

FAIRCHILD WESTON SYSTEMS INC.
Excellence in Defense Systems Technology...Worldwide
DATA SYSTEMS DIVISION
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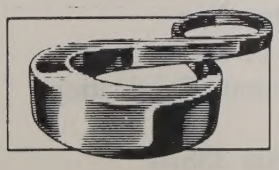
MODEL 4005-04-0-C1873A

RACK ADAPTER

INSTRUCTION MANUAL



FAIRCHILD WESTON SYSTEMS INC.

FAIRCHILD WESTON Schlumberger

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SECTION 1

GENERAL DESCRIPTION

1.1 INTRODUCTION

This manual contains information describing the EMR Model 4005 Rack Adapter. The rack adapter is designed as an adapter unit used to mount the EMR 4000-Series modular ground equipment in a standard 19-inch equipment rack.

The information in this manual includes a physical and electrical description, installation instructions, and maintenance information pertinent to the rack adapter. For information describing the EMR 400-Series modular ground equipment installed in the rack adapter, refer to the appropriate instruction manual.

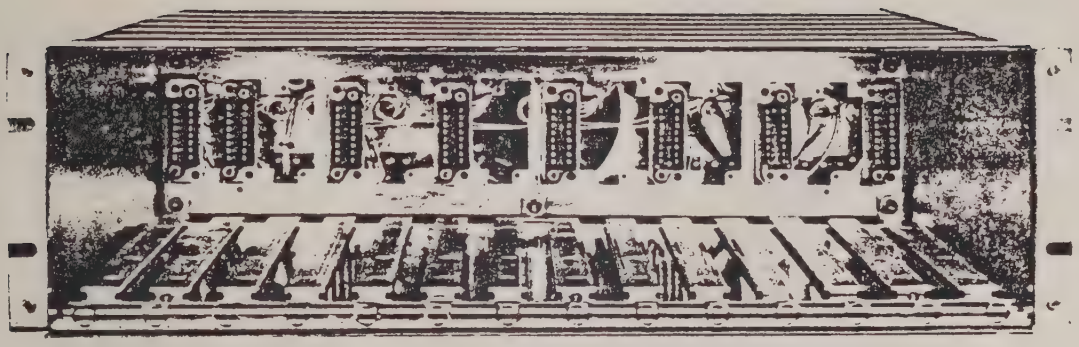
1.2 PHYSICAL DESCRIPTION

The rack adapter, shown in Figure 1-1, occupies approximately 5-1/4 inches of panel height in a standard 19-inch equipment rack. The rack depth required is 21 inches excluding any rear-panel components extending beyond the rack adapter side-mounting plates.

The interior of the rack adapter is divided into 14 modular increments, each 1-7/32 inches wide. The EMR 400-Series equipment to be mounted in the rack adapter is an integral multiple of this measurement. Thus, any number of units up to 14 can be accommodated. For the type and position of the units in the rack adapter, refer to Figure 3-2.

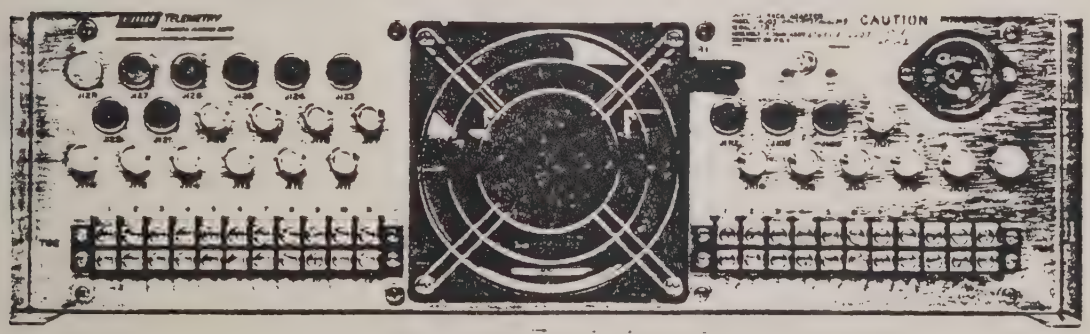
The modular units are guided into the proper location by T-rails mounted on the bottom surface of the rack-adapter interior. Float-mounted mating connectors are provided at the rear of each modular-unit location to complete the electrical connections. A push-to-lock knob on the modular-unit front panel secures the unit in the assigned location.

The rack adapter rear-panel configurations are variable depending on the particular rack adapter design sequence. A rear-panel view for the appropriate rack adapter is provided in Figure 3-2.



a. Internal Front View of Standard 4005

b. Internal Rear View of Standard 4005 with Rear Panel Lowered



c. Rear Panel Layout of Standard 4005

Figure 1-1. EMR Model 4005 Rack Adapter

1.3 ELECTRICAL DESCRIPTION

The rack adapter is factory wired to accept a particular group of modular equipment. (An exception to this is the Model 4005-01. This unit contains no internal wiring and may be field wired to accept the desired modular group.) A 16-pin connector on each modular unit mates with a receptacle in the rack adapter interior. These receptacles are then wired to appropriate connectors mounted on the rack adapter rear-panel. A diagram illustrating this wiring is provided at the end of Section 3. The diagram lists the type and number of external connections terminated at the rack adapter rear-panel connectors and contains a functional block diagram that show the signal flow between individual units within the rack adapter.

SECTION 2

INSTALLATION

2.1 GENERAL

The EMR Model 4005 Rack Adapter is a self-contained unit ready for installation in a standard 19-inch equipment rack. Any shortage or damage to the unit should be reported in accordance with the instructions of the EMR Purchase Order Acknowledgment (POA).

2.2 MOUNTING

The rack adapter physical dimensions and mounting requirements are illustrated in Figure 2-1. To mount the rack adapter in the equipment rack, install the mounting hardware through the four indentations in the front panel and four feedthrough holes on the rear side panels. The mounting hardware for this installation is provided with each rack adapter.

In mounting the modular units in the rack adapter (see Figure 3-2), align the unit on the T-rails and slide straight in. Once in position, depress the push-to-lock knob on the modular unit front panel. To remove the modular unit, release the push-to-lock knob, pulling straight out, and extract the modular unit.

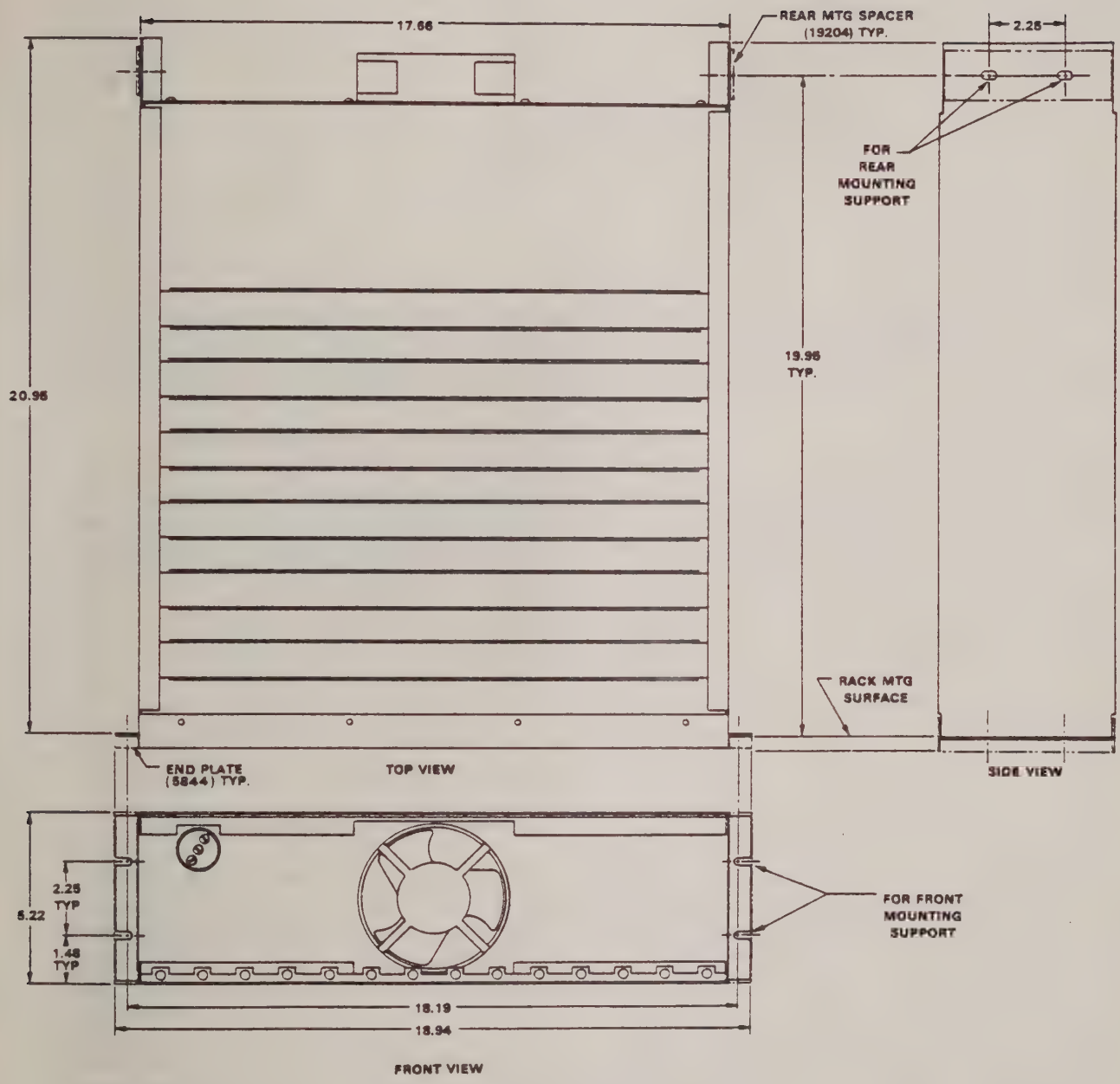
After the rack adapter installation and modular-unit installation, complete the external electrical connections at the rack adapter rear-panel connectors. Information pertinent to the external connections is provided in Figure 3-2.

2.3 COOLING

The rack adapter with the modular units installed is a completely enclosed structure. Cooling for the modular units is provided by an internal Rotron Muffin venturi blower mounted vertically on the rack adapter rear-panel. This blower is designed for adequate cooling of any number and type of EMR 4000-Series modular units installed in the rack adapter.

CAUTION

Ensure that, when primary power is applied to the modular units, the cooling blower is operating. A blower failure will result in overheating and damage to the modular units.



NOTES:

1. ALL DIMENSIONS FOR REFERENCE ONLY.

Figure 2-1. Rack Adapter Physical Dimensions
(for Serial No's. 193 and Up)

SECTION 3

MAINTENANCE

3.1 GENERAL

This section provides information to aid in troubleshooting and maintaining the Model 4005 Rack Adapter. The rack adapter is maintained by performing the inspection and trubleshooting procedures outlined in paragraphs 3.2 and 3.3.

3.2 INSPECTION

The Model 4005 should be subjected to a regular inspection program as a means of preventive maintenance or, if a malfunction occurs, to aid in isolating the trouble. The inspection program should include the following:

a. Inspect rear-panel connectors for loose or broken connections.

b. Inspect internal receptacles for loose or broken connections.

c. Inspect T-rails for proper mounting.

3.3 TROUBLESHOOTING

Troubleshooting the Model 4005 Rack Adapter is limited to a continuity test or wiring between the internal receptacles and the rear-panel connectors. Access to the wiring is obtained by removing the upper and lower mounting screws in the rear panel. The rear panel is then pivoted downward exposing the rack adapter interior.

Troubleshooting of the modular equipment mounted in the rack adapter is accomplished by using the EMR Model 4601 Test Adapter. The test adapter allows a modular unit to be removed from the rack adapter for test and access to individual assemblies and components of the modular units.

3.3.1 Model 4601 Test Adapter

The Model 4601 Test Adapter, shown in Figure 3-2, permits servicing of the EMR 4000-Series modular units while extended from the rack adapter. The main chassis (one modular width) contains a 16-pin connector which plugs into the appropriate mating receptacle in the rack adapter interior. An inter-connecting cable contains a plug chassis which plugs into the modular unit being serviced. Test points are located on the side of the plug chassis permitting access to signals at terminals on the modular unit rear connector.

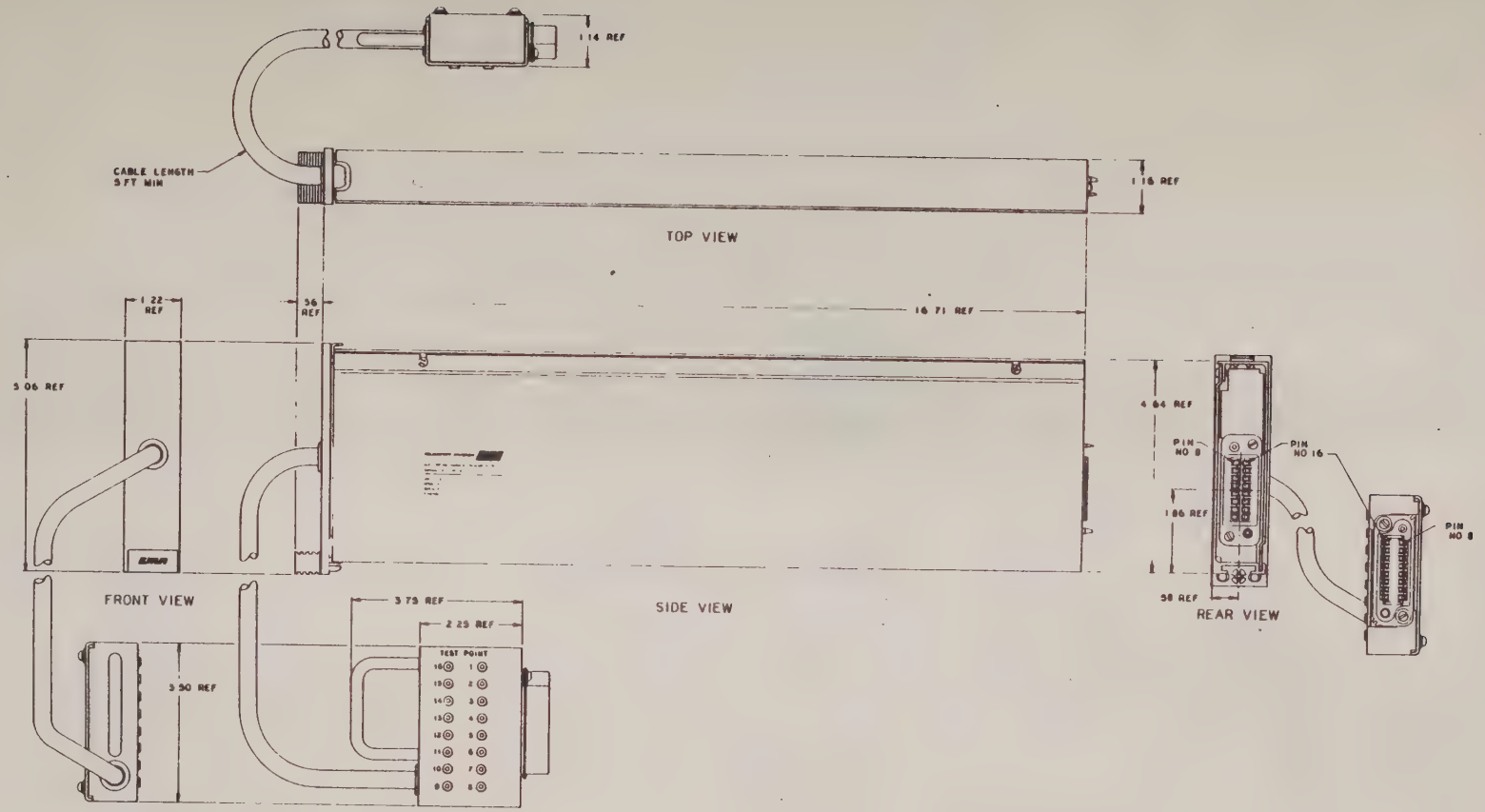
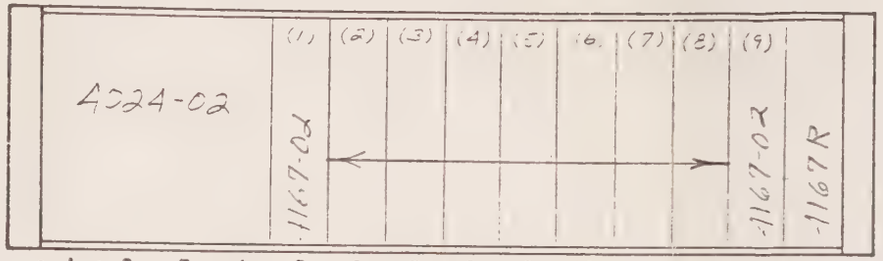
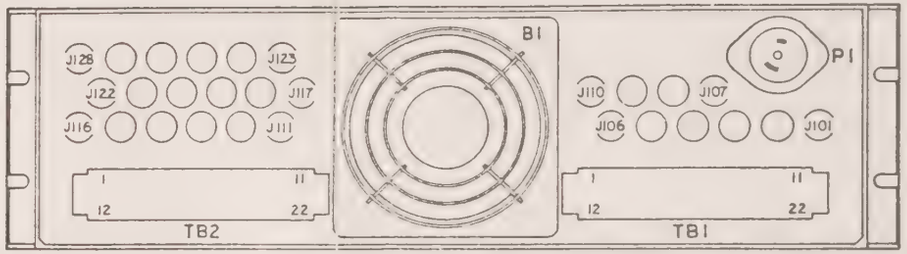


Figure 3-1. EMR Model 4601 Test Adapter

REVISIONS				
SYM	DESCRIPTION	REF AS EFFECTIVE	DATE	APPROVED
A	ECO 49449 ADD 10 TO CONN J1 THRU J14.	1 & UP	4-0-74	



RACK ADAPTER LAYOUT



RACK ADAPTER REAR VIEW

10

CONN NO.	J1	J2	J3	J4	J5	J6	J7	J8	J9	J10	J11	J12	J13	J14
ITEM NO.	○	(-)	○	○	(-)	(-)	(-)	(-)	(-)	(-)	○	(-)	(-)	(-)

CONNECTOR 3 LOCATIONS

4

-J- POSN	101 THRU 118 126 THRU 128

5

-J- POSN	—

6

-J- POSN	—

7

-J- POSN	119 THRU 125

8

-J- POSN	—

24040

10 WHEN INDICATED BY "10" CONN IS INSTALLED WITH PIN NO. 1 UP.

9 MATING CONN, ITEMS-39, 43 & 41 RESPECTIVELY, TO BE PART OF BUT NOT ASSEM TO UNIT AT MFG STAGE. MATING CONN FOR 8 FURNISHED ONLY AS POA LINE ITEM.

8 INSTALL TROMPETER TWINAX CONN, ITEM-44. 9

7 INSTALL PLUG BUTTON, ITEM-32.

6 INSTALL BNC TWINAX CONN, ITEM-35.
5 INSTALL TNC COAX CONN, ITEM-42.
4 INSTALL BNC COAX CONN, ITEM-28.
} 9

3 "BLUE RIBBON" CONNECTOR:
A) NON-SHIELDED CONN, ITEM-4.
B) SHIELDED CONN, ITEM-5.

NOTES:

FOR PARTS LIST SEE P/L NO. 24040

DRAWN BY	DATE	EMR TELEMETRY WESTON INSTRUMENTS INC. SARASOTA, FLORIDA
DESIGNER		
CHECKED		
DESIGN ENGINEER		
PROJECT ENGINEER		
APPROVED		
APPROVED		

ADAPTER, ASSY, RACK

MODEL 4005-04-[illegible]-C1973A

SIZE	CODE IDENT NO.	DRAWING NO.	REV
C	08141	24040	A

NEXT ASSY [illegible]

SHEET 1 OF 1

II	III

FORM 3/2/562 B

PL-24040

REVISIONS				
SYM	DESCRIPTION	EFFECTIVITY	DATE	APPROVED

MODEL-4005-04-0-C1873A

DRAWN BY	[illegible]	DATE 1-4-72
DESIGNER		
CHECKER	[illegible]	1-14-72
DESIGN-ENGINEER	[illegible]	1-21-72
PROJECT ENGINEER		
APPROVED		
APPROVED		

GRADE II
CAT. III

GAGE TELEMETRY / EMC DIVISION OF WESTON INSTRUMENTS, INC. A SCHLUMBERGER COMPANY

PARTS LIST
ADAPTER, ASSY, RACK

ECO

SIZE	CODE IDENT NO.	DRAWING NO.	REV
A	06141	PL-24040	

SCALE - —+ | SHEET 1 OF 2

MR 3/2/556A

-0 = -9(-000721)
-7 = -11(-000741)
-8 = -10(-000731)

REQD	DWG SIZE	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	CODE IDENT.	ITEM OR SYMBOL
1	D	415-89-00072	ADPT, ASSY, RACK	6099-9	1
11		063-98-00047	CONN, RCPT, 16-PIN	26-190-16	4
1	C	063-89-00002	CONN, ASSY, RCPT, 16-PIN	5843	5
21		063-02-00014	CONN, RCPT, BHD, BNC COAX	UG-1094A/U	28
21		063-02-00015	CONN, PLUG, BNC	UG-88C/U	39
21		273-98-00045	WASHER, PHENOLIC .385 ID	5620-89-62	29
21		022-98-00002	BUSH., BNC CONN	10221-N	30
21		255-98-00012	TERM., LUG, SOLDER	NO. 4	31
A/R		060-11-00001	COMP, LOCTITE	GRADE A	33
7	A	290-99-00002	BUTTON, PLUG, MODIFIED	16667	32
1		063-98-00150	CONN, RCPT, BHD, BNC TWINAX	31-223	35
1		063-98-00151	CONN, PLUG, TWINAX	31-244	41
1		063-98-00153	CONN, RCPT, BHD TNC.	31-2301	42
1		063-98-00168	CONN, PLUG, TNC	31-2373	43
1		063-98-00177	CONN, RCPT, TWINAX, 2-PIN	BJ-37	44
1		063-98-00178	CONN, PLUG, TWINAX, 2-PIN	PL-37	45
1	C	24041	WIRING, EXT, ELECTRICAL		REF
1	D	24042	WIRING, INTL, SCHEDULE		REF
1	C	24043	BLOCK DIAGRAM		REF
1	D	905-18-00001	OUTLINE DWG, MOD 4005	6095	REF

SIZE A | CODE IDENT NO. 06141 | DRAWING NO. PL-24040 | REV

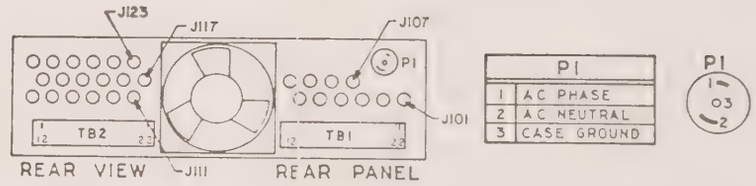
SCALE 3-6'

SHEET 2

REVISIONS				
SYM	DESCRIPTION	SERIAL EFFECTIVE	DATE	APPROVED

J101 THRU J128

-J-	FUNCTION-PIN NO. 1 ▷1	FUNCTION-PIN NO. 2 ▷2	SHIELD
101			
102			
103			
104			
105			
106			
107			
108			
109			
110			
111			
112			
113			
114			
115			
116			
117			
118			
119			
120			
121			
122			
123			
124			
125			
126			
127			
128			



P1	
1	AC PHASE
2	AC NEUTRAL
3	CASE GROUND

24041

TB1

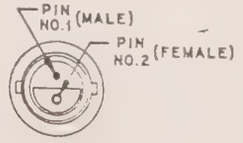
PIN	FUNCTION	FUNCTION	PIN
1			12
2			13
3			14
4			15
5			16
6			17
7			18
8			19
9			20
10			21
11		CASE GROUND	22

TB2

PIN	FUNCTION	FUNCTION	PIN
1			12
2			13
3			14
4			15
5			16
6			17
7			18
8			19
9			20
10			21
11			22

NOTES:

1. ▷ TWINAX CONN: MALE PIN.
   BNC OR TNC COAX CONN: CENTER CONTACT.
2. ▷ FOR TWINAX CONN ONLY:



DRAWN BY		DATE	
DESIGNER			
CHECKER			
DESIGN ENGINEER			
PROJECT ENGINEER			
APPROVED			

EMR TELEMETRY
WESTON INSTRUMENTS INC
SARASOTA FLORIDA

WIRING, EXT, ELECTRICAL
RACK ADAPTER
MODEL 4005-04-0-C1973A

SIZE	CODE IDENT NO	DRAWING NO	REV
C	06141	24041	

NEXT ASSY: C-

SHEET 1 OF 1

FORM 3/2/563A

HOLE/COMPONENT CHART	
LAST NO. USED HOLE / QTY.	DESCRIPTION/UNUSED ~~NUMBER~~

ARTWORK REVISION INDEX							
SHEET NO.							
REVISION							

REVISIONS				
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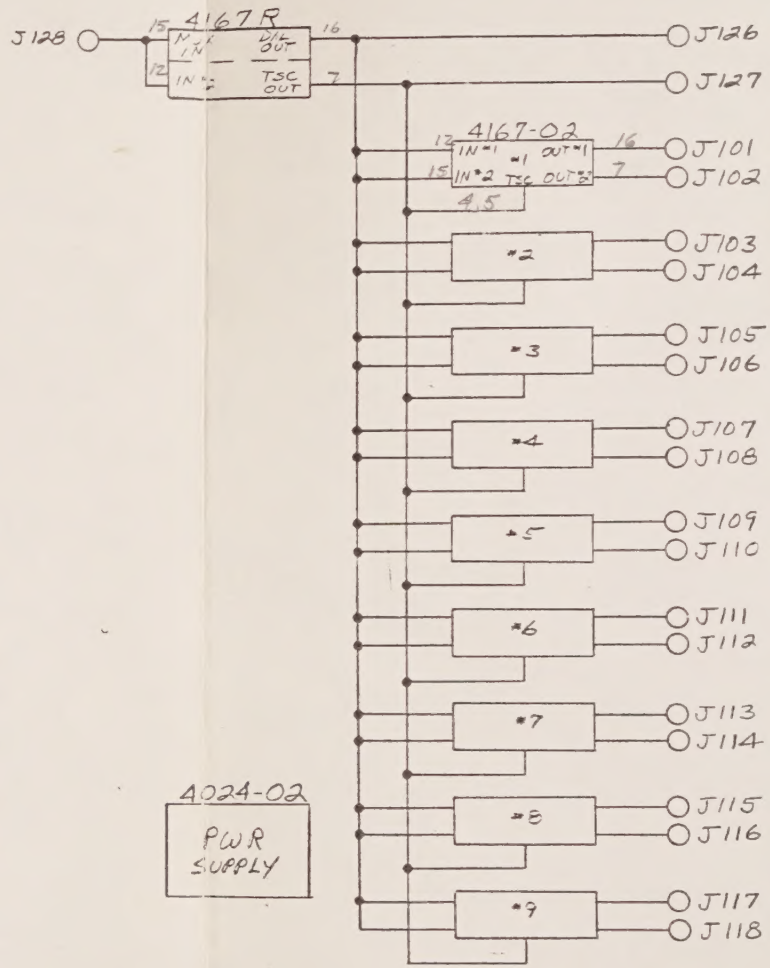

24043

-1	BASIC	CONTROL NO.	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	ITEM OR SYMBOL
CONFIGURATION					
QTY. REQUIRED					

PARTS LIST

BSC	24043	4005-04
DASH NO.	NEXT ASSY NO.	USED ON

APPLICATION

DO NOT APPLY PART NO. IDENTIFY PER EMR 13406

LOCATE APPROX AS SHOWN

I	II	
GRADE	CATEGORY	SIMILAR TO

UNLESS OTHERWISE SPECIFIED
TOLERANCES
DECIMALS: XX ± .03, XXX ± .010
ANGLES: ± ½°
SURFACE FINISH: 125
DIMENSIONS ARE IN INCHES
THREADS CLASS 2A OR 2B PER MIL-S-7742
REMOVE BURRS AND BREAK EDGES .020 MAX.
HOLE TOLERANCES PER EMR SPEC 2378
DIMENSIONS NOT TO BE APPLIED FINISH
EMR WORKMANSHIP STANDARDS APPLY
DO NOT SCALE DRAWING

MATERIAL

TREATMENT OR FINISH

DRAWN BY	H. L. Knight	DATE 1-7-74
DESIGNER	H	
CHECKER	[illegible]	1-14-74
DESIGN ENGINEER	H. L. Knight	1-7-74
PROJECT ENGINEER		

APPROVED

APPROVED

EMR
Schlumberger
EMR TELEMETRY
WESTON INSTRUMENTS, INC.
SARASOTA, FLORIDA 33578

BLOCK DIAGRAM

MODEL 4005-04-0-C1873A

SIZE	CODE IDENT NO.	DRAWING NO.	REV
C	06141	24043	

SCALE —— SHEET 1 OF 1

EMR 3/2/340

MP MASTER
MA29937